

Table 5
Area of Potential Concern Data Gaps

Area of Potential Concern	Data Gaps								
	Nature and Extent of Off-Shore Contamination (1)					Contaminant Source Areas and Transport Pathways (2)			
Name	COIs (3)	Lateral Extent	Vertical Extent	Transition Zone Water	Surface Water (4)	Source Area	Storm-water (5)	Ground-water	Bank Erosion
Sultzer	No (dioxin data potentially needed due to presence of PCBs - to be determined (TBD))	Yes (limited RI data, may be able to use DMMP data)	Yes (limited subsurface data - check DMMP data)	No (estimate through equilibrium partitioning calculations)	Unknown (no sw stations nearby; may be needed based on upland work to help estimate loading)	Yes (potential overwater activities)	Yes (currently under investigation)	Yes (currently under investigation)	Unkonwn
Goldendale / UPRR	Yes (TPH due to lack of TPH data upstream of RM 9.2, dioxin TBD)	Unkown (dependent on review of historic and DMMP sediment data)	Yes (limited RI data; check DMMP sediment data)	No (estimate through equilibrium partitioning calculations)	Yes (surface water data may be needed to help estimate loading from UPRR outfalls)	Yes (potential overwater activities)	No (Goldendale) / Yes (Upland source identification on UPRR site required)	No	Unkonwn
Outfall 47	Yes (TPH due to lack of TPH data upstream of RM 9.2, dioxin TBD)	No Assuming DMMP data would be adequate	No (Assuming DMMP data would be adequate)	No (estimate through equilibrium partitioning calculations)	No (combine with UPRR surface water station above)	Yes (potential sources contributing to OF 47 not yet fully defined)	Yes	No	No
Fireboat / GE / Galvanizers / OFs 16 & 17	Yes (additional dioxin data needed due to presence of PCBs)	Yes supplemental data for FS, (towards channel)	Yes (limited subsurface data downstream)	No (estimate through equilibrium partitioning calculations)	No (existing surface water sampling station)	Yes (Potential sources contributing to OF not yet fully defined)	Yes	No	No

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S-5 outfall	Yes (TPH due to lack of TPH data upstream of RM 9.2)	Yes (supplemental data towards channel for FS)	Yes (limited subsurface data)	No (estimate through equilibrium partitioning calculations)	Unknown (no sw stations nearby; may be needed based on upland work to help estimate loading)	Yes (potential sources contributing to OF S5)	Yes	No	No
Gunderson / Shell	Yes (limited VOC data off Area 1, dioxins due to PCB contamination, Mn due to downstream hits above PEC, Supplemental TPH may be required)	Yes (limited samples behind Shell and Area 3 docks)	Yes (behind Shell dock, south end of Area 3 and James River)	Unknown (dependent on TZW sample results off Area 1)	Yes (help evaluate contaminant loading in vicinity of Shell Dock and Outfall 18)	Yes (potential sources contributing to OF 18 and over-water activities)	Yes (currently under investigation) (stormwater source control action will likely be required in Areas 2 & 3)	Yes (currently under investigation & under source control action)	Yes (currently under investigation) (bank source control action will likely be required in Areas 2 & 3)
Shipyard / Lagoon	Yes (Supplemental TPH may be required, dioxins needed due to presence of PCBs)	Yes (lateral N&E fairly well defined, may need supplemental sediment data for hot spot identification)	Yes (vertical N&E fairly well defined, may need supplemental sediment data for hot spot identification)	No (estimate through equilibrium partitioning calculations)	Yes (surface water transect needed at mouth of SI Lagoon to understand COI transport)	Yes (upland sources to SI Lagoon other than Shipyard and overwater activities)	Yes (Shipyard stormwater will be investigated) yes (stormwater sources to SI Lagoon other than Shipyard)	Yes (Shipyard GW currently under investigation) yes (upland GW sources to SI Lagoon other than Shipyard)	Yes (Shipyard bank soil currently under investigation) yes (bank soil other than Shipyard)

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Willbridge	Yes VOCs	Yes (supplmental sediment data for FS)	Yes (limited subsurface data offshore)	Unknown (dependent on ongoing TZW sample results)	No (surface water sampling station located nearby)	Yes (potential overwater activities)	Yes (currently under investigation)	Yes (currently under investigation)	Yes (currently under investigation)
Triangle Park	No	Yes (supplmental sediment data for FS)	Yes (limited subsurface data)	No (estimate through equilibrium partitioning calculations)	No	Yes (potential overwater activities)	No	Yes (currently under investigation)	No
Outfall 48	No	Yes (may need supplemental sediment data for FS)	Yes (only City surface data available near outfall; metals & PAH need further delineation)	No (estimate through equilibrium partitioning calculations)	Unknown (no sw stations nearby; may be needed based on upland work to help estimate loading)	yes (potential sources contributing to OF 48 not yet fully defined)	Yes	No	No
RPAC / Arkema	Yes (fingerprinting may be required for source diffrentiation)	No (Ri/FS) Yes (RD)	No (RI/FS) Yes (RD)	Unknown (dependent on Round 2 TZW, RPAC gw investigation and Arkema early action data needs)	No (2 existing stations)	Yes (potential overwater activities)	Yes (currently under investigation)	Yes (currently under investigation)	Yes (currently under investigation)
Willamette Cove	Yes (dioxin data needed due presence of PCB contamination)	Yes (supplemental data needed downstream and towards channel)	Yes (supplemental data needed downstream and towards channel)	Yes (petroleum product release area)	No (existing surface water sampling station)	Yes (potential overwater activities)	Yes (currently under investigation)	Yes (currently under investigation)	Yes (currently under investigation)

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Siltronic chlorinated VOCs	No	No	No	No	No (currently under investigation)	Yes	Yes (currently under investigation)	Yes (currently under investigation)	No (for Siltronic's HVOC release)
Northwest Natural (Gasco)	No	No (RI/FS) Yes RD)	No (RI/FS) Yes (RD)	Unknown (dependent on TZW sample results)	yes (onging - change method to XAD)	No	Yes (currently under investigation)	Yes (currently under investigation)	Yes (currently under investigation)
Crawford/ BES	No	Yes (distinguish sources)	Yes (limited subsurface data)	No (estimate through equilibrium partitioning calculations)	Unknown (no sw stations nearby; may be needed based on upland work to help estimate loading)	Unknown (further evaluaton of BES Lab XPA required to determine if any data gaps exist)	Unknown (further evaluaton of BES Lab XPA required to determine if any data gaps exist)	Unknown (further evaluaton of BES Lab XPA required to determine if any data gaps exist)	Yes (Crawford St- Beach sand removal not totally effective)
US Moorings	Unknown (dependent on 2B cores)	Unknown (dependent on 2B cores)	Unknown (dependent on 2B cores)	Unknown (dependent on 2B cores)	No (surface water sampling station located nearby)	(6)	(6)	(6)	(6)
St. Johns West	No	Yes (supplemental sediment data for FS; may be able to use DMMP data)	Yes (supplemental sediment data for FS; may be able to use DMMP data)	No (estimate through equilibrium partitioning calculations)	No (surface water sampling station located nearby)	no (Marine Finance property) yes (overwater structures)	yes (currently under investigation)	No	No

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Marcom	yes (Mn - detections above PEC observed)	Yes (lateral N&E fairly well defined, may need supplemental data towards channel)	Yes (vertical N&E fairly well defined, may need supplemental data towards channel and Cathedral Park)	No (estimate through equilibrium partitioning calculations)	Yes (understand source loading)	No (N Parcel) Yes (S Parcel - upland RI not complete for South Parcel)	yes (upland off-site stormwater sources & potential S Parcel sources)	No (N Parcel) Yes (S Parcel - upland RI not complete for South Parcel)	Yes (will need to be evaluated in both N & S Parcels)
Schnitzer Burgard	Yes (dioxin needed due presence of PCB contamination;P BDEs may be associated with auto fluff)	Unknown (dependent on 2B cores)	Unknown (dependent on 2B cores)	No (estimate through equilibrium partitioning calculations)	No (surface water sampling station located nearby)	no (Schnitzer) yes (upland stormwater sources)	Yes (potential significant migration pathway; currently under investigation)	Yes (GW currently under investigation)	Yes (currently under investigation)
Time / Premier Edible Oil	No (dioxin TBD)	Yes (supplmental sediment data needed towards channel and downstream)	Yes (limited subsurface data)	Unknown (dependent on additional upland sampling efforts)	Yes (off/downstream of Time Oil; dioxin)	yes (currently under investigation)	Yes (currently under investigation)	Yes (currently under investigation)	Yes (currently under investigation)
OSM/ OF 53A	Yes (Mn)	Yes (supplmental sediment data needed towards channel and downstream)	Yes (vertical N&E fairly well defined, may need supplemental sediment data)	Yes (GW contaminated with Mn and petroleum products likley entering river)	No (surface water sampling station located nearby)	Yes (potential overwater activities and sites other than OSM that may contribute to stormwater)	Yes (currently under investigation at OSM) yes (for sites other than OSM)	Yes (currently under investigation at OSM) yes (for sites other than OSM)	Yes (currently under investigation at OSM) yes (for sites other than OSM)

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Downstream PAHs	Yes (PAH fingerprinting to differentiate petrogenic and pyrogenic PAHs)	Yes (further identify hot spots and local sources of PAHs, define extent into the Willamette River channel and Multnomah channel)	Yes (further define vertical extent of local hot spots)	Unknown (dependent on on TZW sample results)	No (Numerous surface water within Area of Potential Concern)	Yes (source differentiation)	Not Applicable	Not Applicable	Not Applicable
Downstream DDT	yes (potential fingerprinting needed to distinguish certain Arkema COIs from RPAC COIs)	Yes (delineate downstream and offshore extent)	Yes (further define vertical extent of local hot spots)	No (estimate through equilibrium partitioning calculations)	No (Numerous surface water within Area of Potential Concern)	Not Applicable	Not Applicable	Not Applicable	Not Applicable
Site-Wide PCB and DDT	yes (dioxin, PBDE, Mn)	Unknown	Unknown	No (estimate through equilibrium partitioning calculations)	No (Numerous surface water within Area of Potential Concern)	Yes	Yes	Yes	Yes

Footnotes:

- (1) Nature and extent of offshore contamination are generally considered in-water data gaps to meet project schedule
- (2) Evaluation of contaminant source areas and transport pathways is generally considered an upland data gap.
- (3) Dioxin is considered a potential COI at all locations.
- (4) Data gaps assume ongoing data collection at existing surface water stations
- (5) "Stormwater" includes runoff directed to conveyance systems & overland runoff (ie, sheet flow)
- (6) Potential upland source area(s) not in DEQ's Cleanup Program